

## **IN THE CLAIMS:**

The text of all pending claims (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. When strikethrough cannot easily be perceived, or when five or fewer characters are deleted, [[double brackets]] may be used to show the deletion. The status of each claim is indicated with one of (Original), (Previously Presented), (Cancelled), (Withdrawn), (New), (Currently Amended), or (Not Entered).

Please AMEND claims **1, 2, 14, 39** and **40** and ADD new claims **44, 45, 46, and 47** also as noted below.

### **Listing of the Claims** -- (as corrected with respect to new claims 44-47)

#### **1. (Currently Amended) Apparatus including:**

a first component defining a first passage;

a second component connectable with the first component and defining a second passage, said passages being aligned when the components are connected to each other;

a rotatable locking pin having ~~attached-one or more affixed~~ formations and a retaining element having ~~attached-one or more affixed~~ engaging formations complementary to said formations and each configured for being accommodated in the aligned passages, the rotatable locking pin being rotatable relative to the components when accommodated in the aligned passages between

a locked position in which the formations of the locking pin engage at least one of the engaging formations of the retaining element so as to prevent withdrawal of the locking pin from the aligned passages and to prevent separation of the components, and

a free position in which the pin is slidably removable from the aligned passages to permit separation of the components,

wherein said formations of the pin are at least partly disposed along a circumference of the pin, and

wherein the pin is configured so that said formations interlock with the engaging formations of the retaining element as the pin is rotated from the free position to the locked position to prevent separation of the first and second components.

#### **2. (Currently Amended) Apparatus according to claim 1,**

wherein when the first component and second component are connected to each other, they can be separated by effecting relative movement of the components in opposite disengagement directions, and

wherein interlocking the pin with the retaining element within the aligned first and second passages prevents the relative movement of the first and second components in said opposite disengagement directions and also prevents separation of the first and second components.

3. **(Previously Presented)** Apparatus according to claim 2, wherein the pin, when accommodated in the aligned passages, extends in a direction non-parallel to the disengagement directions.
4. **(Previously Presented)** Apparatus according to claim 3, wherein the pin, when accommodated in the aligned passages, extends in a direction substantially perpendicular to said disengagement directions.
5. **(Cancelled)**
6. **(Cancelled)**
7. **(Previously Presented)** Apparatus according to claim 1, wherein the pin has an axis of rotation and rotation of the pin around that axis moves the pin between the locked position and the free position and one end of the pin along the axis rests on a part of the first or the second component.
8. **(Previously Presented)** Apparatus according to claim 1, wherein upon rotating the locking pin into the locked position to interlock with the retaining element, the engagement between the locking pin and the retaining element prevents (a) withdrawal of the locking pin from the aligned passages and (b) withdrawal of the locking pin away from the retaining element.
9. **(Previously Presented)** Apparatus according to claim 8, wherein the formations include land areas that are substantially flat.
10. **(Previously Presented)** Apparatus according to claim 8, wherein the formations include land areas that are substantially concave.
11. **(Previously Presented)** Apparatus according to claim 1, wherein the formations form a helical corkscrew about the pin so that rotation of the pin from the free position to the locked position in one direction draws the pin further into the aligned passages, and upon rotation of the pin in the opposite direction from the locked position to the free position drives the pin out of the aligned passages.
12. **(Previously Presented)** Apparatus according to claim 1, wherein the pin has therein an insertion recess extending, longitudinally relative to the pin to accommodate the retaining element and to permit insertion of the pin into the aligned passages when the insertion recess is aligned with the retaining element.
13. **(Previously Presented)** Apparatus according to claim 12, wherein the insertion recess does not extend along an entire longitudinal length of the pin.
14. **(Currently Amended)** Apparatus including:
  - a first component defining a first passage;
  - a second component connectable with the first component and defining a second passage, said passages being aligned when the components are connected to each other;
  - a rotatable locking pin having formations and a retaining element having engaging formations complementary to said formations and each configured for being accommodated in the aligned passages, the rotatable locking pin being rotatable relative to the components when accommodated in the aligned passages between

a locked position in which the formations of the locking pin engage at least one of the engaging formations of the retaining element so as to prevent withdrawal of the locking pin from the aligned passages and to prevent separation of the components, and

a free position in which the pin is slidably removable from the aligned passages to permit separation of the components,

wherein said formations of the pin are at least partly disposed along a circumference of the pin,

wherein the pin is configured so that said formations interlock with the engaging formations of the retaining element as the pin is rotated from the free position to the locked position to prevent separation of the first and second components;

wherein the pin has therein an insertion recess extending, longitudinally relative to the pin to accommodate the retaining element and to permit insertion of the pin into the aligned passages when the insertion recess is aligned with the retaining element;

wherein the insertion recess does not extend along an entire longitudinal length of the pin; and

;

wherein the pin further comprises a withdrawal recess and said withdrawal recess is displaced longitudinally on a circumference of the pin and apart from the insertion recess, which withdrawal recess permits withdrawal of the pin from the aligned passages, when the withdrawal recess is aligned with the retaining element.

**15. (Previously Presented)** Apparatus according to claim 14, wherein the pin when inserted into the aligned passages with the insertion recess aligned with the retaining element, the pin is in the free position and is rotatable to the locked position in a particular rotational direction, and once having being rotated to the locked position, is rotatable in the particular rotational direction to a further position in which the withdrawal recess is aligned with the retaining element.

**16. (Previously Presented)** Apparatus including:

a first component defining a first passage;

a second component connectable with the first component and defining a second passage, said passages being aligned when the components are connected to each other;

a rotatable locking pin having formations and a retaining element having engaging formations complementary to said formations and each configured for being accommodated in the aligned passages, the rotatable locking pin being rotatable relative to the components when accommodated in the aligned passages between

a locked position in which the formations of the locking pin engage at least one of the engaging formations of the retaining element so as to prevent withdrawal of the locking pin from the aligned passages and to prevent separation of the components, and

a free position in which the pin is slidably removable from the aligned passages to permit separation of the components,

wherein said formations of the pin are at least partly disposed along a circumference of the pin,

wherein the pin is configured so that said formations interlock with the engaging formations of the retaining element as the pin is rotated from the free position to the locked position to prevent separation of the first and second components, and

wherein one of the passages of one of the components is closed at one end such that the aligned passages are closed at one end.

**17. (Previously Presented)** Apparatus according to claim 16, wherein the component having a passage closed at one end includes a resilient element in that passage immediately adjacent the one closed end, wherein the pin, when accommodated in said aligned passages, is configured to abut against the resilient element.

**18. (Previously Presented)** Apparatus including:

a first component defining a first passage;

a second component connectable with the first component and defining a second passage, said passages being aligned when the components are connected to each other;

a rotatable locking pin having formations and a retaining element having engaging formations complementary to said formations and each configured for being accommodated in the aligned passages, the rotatable locking pin being rotatable relative to the components when accommodated in the aligned passages between

a locked position in which the formations of the locking pin engage at least one of the engaging formations of the retaining element so as to prevent withdrawal of the locking pin from the aligned passages and to prevent separation of the components, and

a free position in which the pin is slidably removable from the aligned passages to permit separation of the components,

wherein said formations of the pin are at least partly disposed along a circumference of the pin, and

wherein the pin is configured so that said formations interlock with the engaging formations of the retaining element as the pin is rotated from the free position to the locked position to prevent separation of the first and second components, and

wherein the passage of one of said components includes two coaxial spaced-apart sub-passages, and the passage of the other component is disposed between, and aligned with, said sub-passages when the components are connected to each other, to form said aligned passages.

**19. (Previously Presented)** Apparatus according to claim 1, wherein at least part of said retaining element is resiliently movable under a force exerted by the pin when the pin is rotated from said free position to said locked position.

**20. (Previously Presented)** Apparatus according to claim 19, wherein said part of the retaining element is resilient and allows said resilient movement, while urging said part against the pin.

**21. (Previously Presented)** Apparatus including:

a first component defining a first passage;

a second component connectable with the first component and defining a second passage, said passages being aligned when the components are connected to each other;

a rotatable locking pin having formations and a retaining element having engaging formations complementary to said formations and each configured for being accommodated in the aligned passages, the rotatable locking pin being rotatable relative to the components when accommodated in the aligned passages between

a locked position in which the formations of the locking pin engage at least one of the engaging formations of the retaining element so as to prevent withdrawal of the locking pin from the aligned passages and to prevent separation of the components, and

a free position in which the pin is slidably removable from the aligned passages to permit separation of the components,

wherein said formations of the pin are at least partly disposed along a circumference of the pin,

wherein the pin is configured so that said formations interlock with the engaging formations of the retaining element as the pin is rotated from the free position to the locked position to prevent separation of the first and second components,

wherein at least part of said retaining element is resiliently movable under a force exerted by the pin when the pin is rotated from said free position to said locked position,

wherein said part of the retaining element is resilient and allows said resilient movement, while urging said part against the pin,

wherein said resilient element includes an elastomeric support and an engagement element, and

wherein the engagement element of the retaining element abuts the elastomeric support.

**22. (Previously Presented)** Apparatus according to claim 21, wherein the support defines a channel in which the engagement element is received.

**23. (Previously Presented)** Apparatus according to claim 22, wherein the support and engagement element are bonded to each other.

24. **(Previously Presented)** Apparatus according to claim 22, wherein the support defines a deformation passage extending substantially parallel to said support, to facilitate resilient deformation of the support.
25. **(Previously Presented)** Apparatus according to claim 21, wherein the engagement element is castellated so as to define a plurality of said engaging formations, each of which engages said pin when the pin is in the locked position.
26. **(Previously Presented)** Apparatus according to claim 21, wherein said retaining element has a hole having a closed end and an opposite open end, said engaging formation being located within said hole, the engaging formation or engagement element being movable along said hole and abutted against said resilient element, and protruding through said open end.
27. **(Cancelled)**
28. **(Cancelled)**
29. **(Previously Presented)** Apparatus according to claim 26, wherein the resilient element is constituted by an elastomeric material.
30. **(Previously Presented)** Apparatus according to claim 26, wherein the retaining element includes a plurality of said holes and a plurality of said engaging formations.
31. **(Previously Presented)** Apparatus according to claim 1, wherein the first and second components are machinery components, the first component being a wear-component configured to wear with use, and the second component is configured to support the first component.
32. **(Previously Presented)** Apparatus according to claim 1, wherein the first component and second component are components of earth moving equipment.
33. **(Previously Presented)** Apparatus according to claim 32, wherein the first component and second component are a tooth and an adaptor, respectively, of earth moving equipment, the adaptor being configured to mount the tooth to an earth moving bucket.
34. **(Previously Presented)** Apparatus according to claim 32, wherein the first component and second component are a shroud and adaptor, respectively, of earth moving equipment, the adaptor being configured to mount the shroud to an earth moving bucket.
35. **(Previously Presented)** Apparatus according to claim 32, wherein the first component is one of a tooth and a shroud, and the second component is a lip of an earth moving bucket.
36. **(Previously Presented)** Apparatus according to claim 1, wherein the pin includes a non-circular formation at an end of the pin for engagement with a rotatable tool to effect rotation of the pin between the free and locked positions.
37. **(Previously Presented)** Apparatus according claim 1, wherein at one end, the pin has a cavity therein, and an aperture extending from the end to communicate with the cavity and to permit insertion of a pin-removal tool into the cavity to withdraw the pin from said aligned passages by engagement of the pin-removal tool with the cavity.

38. (Previously Presented) Apparatus according to claim 36 further comprising a cap releasably engageable with said end of the pin.

39. (Currently Amended) A method of releasably interlocking a first component and a second component, wherein the first component defines a first passage and the second component defines a second passage, the method including the steps of:

connecting the first component to the second component so that the first and second passages are aligned with each other;

providing in one of said components a retaining element having attached one or more affixed engaging formations;

inserting a pin, which pin has attached a pair of spaced walls at least partly defining a circumferentially extending formation slot for engagement with said one or more affixed engaging formations of said retaining element, into the aligned passages so that, when so inserted, the pin is in a free position in which it is free to be selectively withdrawn from the aligned passages; and

rotating the pin relative to the components, from the free position to a locked position so that said one or more affixed engaging formations of said retaining element interlock with said formation slot defined by the attached pair of spaced walls to thereby prevent withdrawal of the pin from the aligned passages and hence to prevent separation of the components.

40. (Currently Amended) The method of claim 39, wherein the step of connecting the first component to the second component includes connecting the components such that they can substantially only be separated by effecting relative movement of the components in opposite disengagement directions, and the step of inserting the pin includes inserting the pin such that, when the pin extends from the first passage into the second passage, the pin prevents said relative movement of the components in said opposite disengagement directions.

41. (Previously Presented) Apparatus according to claim 26, wherein said engaging formation comprises a ball and said resilient element comprises a coil spring.

42. (Previously Presented) Apparatus according to claim 26, wherein said engaging formation comprises a ball.

43. (Previously Presented) Apparatus according to claim 26, wherein said resilient element comprises a coil spring.

44. (New) Apparatus according to claim 1,

wherein said affixed formations are affixed at a corresponding set of first fixed locations of the rotatable locking pin,

wherein said affixed engaging formations are affixed at a corresponding set of second fixed locations of the retaining element,

wherein the first fixed locations of the rotatable locking pin are the same first fixed locations of the rotatable locking pin regardless of whether the locking pin is in the locked position or in the free position; and

wherein the second fixed locations of the retaining element are the same second fixed locations of the retaining element regardless of whether the retaining element is in the locked position or in the free position.

45. (New) Apparatus according to claim 44,

wherein when the first component and the second component are connected to each other, they can be separated by effecting relative movement of the first and second components in opposite disengagement directions, and

wherein interlocking the rotatable locking pin with the retaining element within the aligned first and second passages prevents the relative movement of the first and second components in said opposite disengagement directions and also prevents separation of the first and second components.

46. (New) Method according to claim 39,

wherein said affixed engaging formations are affixed at a corresponding set of fixed locations of the retaining element, and

wherein said fixed locations of the retaining element are the same fixed locations of the retaining element regardless of whether the retaining element is in the locked position or in the free position.

47. (New) Method according to claim 46,

wherein said affixed engaging formations each comprise a spring and a ball.

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